CLAIMS

We claim:

[c1] 1. A system for use with a Bluetooth-enabled wireless handset and a car radio, the car radio having an auxiliary connector, comprising:

an adapter module, the adapter module further comprising:

Bluetooth logic substantially compatible with at least one Bluetooth standard to wirelessly exchange communication signals with the Bluetooth-enabled wireless handset,

car radio communications logic substantially compatible with the car radio to transmit communication signals to the car radio, the Bluetooth logic being communicatively coupled to the car radio communications logic to exchange communication signals,

a radio connector configured to couple with the auxiliary connector, the radio connector being adapted to transfer communication signals from the adapter module, through the auxiliary connector, to the car radio, and

wherein the Bluetooth logic, car radio communications logic and radio connector are configured to permit hands-free communications with the Bluetooth-enabled wireless handset.

[c2] 2. The system of claim 1 wherein the adapter module further comprises:

a user control interface, the user control interface controlling at least one LED to indicate a state of the adapter module, and

control logic, the control logic having memory and being communicatively coupled to the Bluetooth logic, the car radio communications logic and the user control interface,

wherein the control logic provides control signals to the Bluetooth logic and the car radio communications logic to control the exchange of communication signals between the Bluetooth-enabled wireless handset and the car radio.

[c3] 3. An enhanced vehicle, comprising:

a vehicle, the vehicle capable of moving occupants,

an vehicle radio, the vehicle radio coupled to the vehicle, an adapter module, the adapter module coupled to the vehicle radio the adapter module further comprising:

Bluetooth logic substantially compatible with at least one Bluetooth standard capable of exchanging communication signals with a Bluetooth-enabled wireless handset,

vehicle radio communications logic substantially compatible with the audio deck to transmit communication signals to the vehicle radio,

wherein the Bluetooth logic is communicatively coupled to the vehicle radio communications logic to exchange communication signals with the Bluetooth-enabled wireless handset and transmits communication signals to the vehicle radio.

[c4] 4. The vehicle of claim 3, wherein the adapter module further comprises:

a user control interface, the user control interface controlling at least one LED to indicate a state of the adapter module,

control logic, the control logic having memory and being communicatively coupled to the Bluetooth logic, the vehicle radio communications logic and the user control interface,

wherein the control logic provides control signals to the Bluetooth logic and the vehicle radio communications logic to control the exchange of communication signals between the Bluetooth-enabled wireless handset and the vehicle radio.

[c5] 5. An adapter module for use with a car radio and a wireless device wherein the wireless device has a primary wireless communications capability for communicating with other wireless devices and secondary wireless communications capability, the adapter module comprising:

wireless transceiver circuitry, the wireless transceiver circuitry being substantially compatible with the wireless device's secondary communications capability to exchange communication signals with the wireless device under the secondary communications capability; and

car radio communications logic, the car radio communications logic being configured to be substantially compatible with the car radio to transmit signals to the car radio, the car radio communications logic being operatively coupled to the wireless transceiver circuitry to receive communication signals from the wireless transceiver circuitry.

[c6] 6. The system of claim 5 wherein the wireless handset's primary wireless communications capability and secondary wireless communications capability operate according to incompatible signaling principles.

[c7] 7. The system of claim 5 wherein the wireless handset's primary wireless communications capability and secondary wireless communications capability operate according to compatible signaling principles.

[c8] 8. The system of claim 7 wherein the compatible signaling principles are specified according to a standard.

[c9] 9. The system of claim 5 wherein the wireless device's secondary wireless communications capability operates substantially according to IEEE 802.11.

[c10] 10. The system of claim 5 wherein the wireless device's secondary wireless communications capability operates substantially according to a Bluetooth standard.

[c11] 11. The system of claim 5 wherein the wireless device's secondary wireless communications capability operates substantially as a short range wireless network.

[c12] 12. The system of claim 5 wherein the wireless device's secondary wireless communications capability operates substantially according to at least one standard associated with contactless smart cards.

[c13] 13. The system of claim 5 wherein the wireless device's secondary wireless communications capability operates substantially according to at least one IrDA standard.

[c14] 14. The system of claim 5 wherein the wireless device's secondary wireless communications capability operates substantially according to a Home RF standard.

[c15] 15. A system for adapting a car radio having an auxiliary connector, for communications with a Bluetooth-enabled wireless handset, comprising:

an adapter module, the adapter module further comprising:

Bluetooth communication means for wirelessly exchanging communication signals with the Bluetooth-enabled wireless handset,

car radio communications means for transmitting communication signals to the car radio, the Bluetooth communication means being communicatively coupled to the car radio communications means for transmitting communication signals from the Bluetooth communication means to the car radio communications means.

[c16] 16. The system of claim 15 wherein the adapter module further comprises control means for providing control signals to the Bluetooth communication means and the car radio communications means for controlling the transmission of communication signals from the Bluetooth-enabled wireless handset to the car radio, and wherein the control means stores information from at least one of the Bluetooth communication means, the car radio communications means and the control means.

[c17] 17. A system for adapting a car radio for hands-free communications with a Bluetooth-enabled wireless handset, comprising:

an adapter module, the adapter module further comprising Bluetooth communication means for exchanging communication signals with the Bluetooth-enabled wireless handset, car radio communication means for receiving communication signals from a microphone means and transmitting communication signals to the car radio, the Bluetooth communication means being communicatively coupled to the car radio communications means for exchanging communication signals between the Bluetooth-enabled wireless handset and the car radio.

[c18] 18. The system of claim 17 wherein the adapter module further comprises control means for providing control signals to the Bluetooth communication means and the car radio communications means for controlling the transmission of communication signals from the Bluetooth-enabled wireless handset to the car radio, and wherein the control means stores information from at least one of the Bluetooth communication means, the car radio communications means and the control means.

[c19] 19. A method of adapting a car radio for communications with a Bluetooth-enabled wireless handset, comprising:

receiving communication signals from the Bluetooth-enabled wireless handset;

converting the communication signals from a first form used by used by the Bluetooth-enabled wireless handset to a second form used by the car radio; and

transmitting the communications signals in the second form to the car radio.

[c20] 20. A computer-readable medium whose contents are capable of causing control logic in an adapter module to perform a method to adapt a hands-free car kit for communications with a Bluetooth-enabled wireless handset, the method comprising:

receiving communication signals from the Bluetooth-enabled wireless handset with Bluetooth logic;

passing the communication signals from the Bluetooth logic to the car radio communications logic;

converting the communication signals from a first form used by the Bluetooth-enabled wireless handset to a second form used by the car radio; and

transmitting the communications signals in the second form to the car radio.

[c21] 21. A modified car radio for creating hands-free communication in a vehicle having a short-range wireless network-enabled adapter module, comprising:

a connector, the connector being attached to the modified car radio and configured to be substantially compatible with the short-range wireless network-enabled adapter module,

a car radio, and

a mute multiplexer coupled to the car radio, the mute multiplexer having a plurality of inputs and an output, one of the plurality of inputs being coupled to communication signals derived from the short-range wireless network-enabled mobile handset for selection by the mute multiplexer for transmission from the output.

[c22] 22. The modified car radio of claim 21, further comprising a power connector integral with the car radio for providing electrical power from the car radio.

[c23] 23. The modified car radio of claim 21, further comprising a vehicle, the vehicle capable of moving occupants, the vehicle coupled to the modified car radio.

[c24] 24. The modified car radio of claim 21, further comprising a microphone, the microphone being operatively coupled to the adapter module.

[c25] 25. The modified car radio of claim 21 wherein the mute multiplexer comprises at least one switch.

[c26] 26. The modified car radio of claim 21 wherein the adapter module is adaptable to provide signals to the car radio to adjust sound levels produced by the car radio.

[c27] 27 The modified car radio of claim 21 wherein the modified car radio is adapted to receive data signals from the short-range wireless network-enabled adapter module.

[c28] 28. The modified car radio of claim 21 wherein the modified car radio is adapted to transmit data signals to the short-range wireless network-enabled adapter module.

[c29] 29. The system of claim 21 wherein the communication signals derived from the short-range wireless network-enabled mobile handset are received substantially according to IEEE 802.11.

[c30] 30. The system of claim 21 wherein the communication signals derived from the short-range wireless network-enabled mobile handset are received substantially according to a Bluetooth standard.

[c31] 31. The system of claim 21 wherein the communication signals derived from the short-range wireless network-enabled mobile handset are received substantially according to at least one IrDA standard.